

### Summary

The invention represents a membrane separation process for the enrichment of at least one gas component in one gas flow, especially for the oxygen enrichment of the air (7) and/or for the enrichment of carbon dioxide in a gas flow, with the gas flow having the purpose to enrich one of its components that is led up to a membrane separation device (10), which is a part of a membrane separation unit (2) and includes at least one membrane. Besides, there is separation of the gas into one that flows into a retentate (8), which is discharged on the retentate side (12) of the membrane, and a permeate (9), which is discharged on the permeate side (11) of the membrane, which takes place on the membrane. With the purpose to allow the separation of gases or the enrichment of a gas component in a gas flow respectively at a low energy consumption rate and at low investment and production costs it is planned to lower the pressure of the gas stream before entering the membrane separation unit (2). The gas flow is compressed up to the inlet pressure higher than that of the air. On the permeate side (11) the level of pressure is lowered compared with the inlet pressure.